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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,764	11/03/2003	Albert Sun	MXIC 1520-1	4234
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HAYNES BEFFEL & WOLFELD LLP			PATEL, HETUL B	
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/699,764	Applicant(s) SUN ET AL.	
	Examiner Hetul Patel	Art Unit 2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>06/29/2006</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to communication filed on June 29, 2006. Claim 1 is amended and claims 1-32 are presented again for examination.
2. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.
3. The IDS filed on 06/29/2006 has been received and carefully considered.
4. Applicant's arguments filed on June 29, 2006 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made as shown below.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1-6, 9-10, 12, 14, 20-27 and 29 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6, 9-10, 13-14, 1-6, 9-10 and 13, respectively, of copending Application No. 10/699,766. Although the conflicting claims are not identical, they are not patentably distinct from each other because the input port has to be present in the integrated circuit of the copending Application No. 10/699,766 in order to receive the data from the external source to the integrated circuit.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

5. Claims 1-10, 12-27 and 29-32 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3-7, 9, 9-17, 9, 9, 1, 3-7, 10-13, 9 and 9 respectively, of copending Application No. 10/699,756. Although the conflicting claims are not identical, they are not patentably distinct from each other because in view of the obviousness-type double patenting rationale enunciated in *Georgia Pacific Corp v United States Gypsum Co.*, 52 USPQ2d 1590, claims 1-10, 12-27 and 29-32 merely defines an obvious variation of the invention claimed in claims 1, 3-7, 9, 9-17, 9, 9, 1, 3-7, 10-13, 9 and 9, respectively, of copending Application No. 10/699,756. The initialization function of the copending Application No. 10/699,756 is a subset of the configuration function of the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

6. Claim 1 is provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 8 of copending Application No. 10/699,766. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

7. Claim 1 of this application conflict with claim 8 of Application No. 10/699,766. 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-2, 4-6, 11-15, 17, 20-21, 23-25 and 28-30 are rejected under 35

U.S.C. 102(e) as being anticipated by Kundu et al. (USPN: 6,751,723) hereinafter, Kundu.

As per claim 1, Kundu teaches an integrated circuit (i.e. SOC 300 in Fig. 17) comprising: an input port (i.e. 308 and 312 in Fig. 17) by which data is received from a source (i.e. in Fig. 17) external to the integrated circuit (e.g. see Col. 14, lines 1-5); a configurable logic array (i.e. 10 in Fig. 17) having a programmable configuration defined by configuration data stored in electrically programmable configuration points within the configurable logic array; memory (i.e. the combination of 332, 334 and 336 in Fig. 17) storing instructions for a mission function for the integrated circuit, storing instructions for a configuration load function used to receive configuration data via said input port, and storing instructions for a configuration function used to transfer the configuration data to the programmable configuration points within the configurable logic array (this features are inherently taught by Kundu, in other words, memory has to store the mission function, the configuration load function to load/receive data from external device(s) and the configuration transfer function to transfer data within the FPGA); and a processor (i.e. 330 in Fig. 17) coupled to the memory which fetches and executes said instructions from the memory (e.g. see Col.14, line 66 – Col.15, line 10 and Fig. 17).

As per claims 2 and 4, Kundu teaches the claimed invention as described above and furthermore, Kundu teaches that the memory (i.e. the combination of 332, 334 and 336 in Fig. 17) comprises a nonvolatile read-only memory (i.e. the ROM 334 in Fig. 17).

As per claims 5 and 6, Kundu teaches the claimed invention as described above. As described above in the rejection of claim 1, the features of storing, the mission function and the functions/instructions of loading data from external device and transferring data within FPGA, in the memory (within the integrated circuit) has to be inherently present in the integrated circuit taught by Kundu because in order to load/execute the mission function in/by the processor, it has to be stored in the memory. Similarly, in order to load/receive data from external device(s) and transferring the data within the FPGA, the load function/instruction and the transfer function/instruction has to be stored in the memory so the processor can execute/run it.

As per claims 11-13, Kundu teaches the claimed invention as described above and furthermore, Kundu teaches that the electrically programmable configuration points comprise floating gate memory cells, nonvolatile, charge programmable memory cells and nonvolatile, programmable memory cells (i.e. the FPGA10 in Fig. 17).

As per claims 14, Kundu teaches the claimed invention as described above and furthermore, Kundu teaches that the integrated circuit further comprises an interface (i.e. the combination of VCI 302 and 306 in Fig. 17) between the processor (i.e. 330 in Fig. 17) and the configurable logic array (i.e. 10 in Fig. 17) supporting the configuration load function (e.g. see Fig. 17).

As per claims 15, Kundu teaches the claimed invention as described above and furthermore, Kundu teaches that the memory (i.e. the combination of 332, 334 and 336 in Fig. 17) stores instruction for an in-circuit programming function (e.g. see Fig. 17).

As per claims 17, Kundu teaches the claimed invention as described above and furthermore, Kundu teaches that the processor comprises a configurable logic array (i.e. 336 in Fig. 17) configured to execute the instructions (e.g. see Fig. 17).

As per claims 20-21, 23-25 and 28-30, see arguments with respect to the rejection of claims 1-2, 4-6 and 11-13, respectively. Claims 20-21, 23-25 and 28-30 are also rejected based on the same rationale as the rejection of claims 1-2, 4-6 and 11-13, respectively.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 3 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kundu in view of Hsu et al. (USPN: 5,359,570) hereinafter, Hsu.

As per claims 3 and 22, Kundu teaches that the memory comprises a nonvolatile read-only memory (i.e. the ROM 334 in Fig. 17). However, Kundu does not teach that the memory comprises a floating gate memory device. Hsu, on the other hand, teaches that floating gate memory devices have the advantage over using the ROM that they

can be programmed and erased, electrically, thereby, exhibiting the advantages of ROM memory, i.e., low power consumption and faster access, along with the writeability of magnetic medium. In addition, as integrated circuit fabrication scale increases, greater density can be achieved. Therefore, it would have been obvious to combine Hsu and Kundu for the benefits described above.

10. Claims 7-8, 18-19 and 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kundu in view of Sun et al. (USPN: 6,401,221) hereinafter, Sun.

As per claims 7 and 8, Kundu teaches that the claimed invention as described above, but failed to teach the watchdog timer as claimed. Sun, however, discloses a watchdog timer coupled to the CPU (i.e. 122 in Fig. 1), a configuration function that includes using a timer to generate a reset on a response to an error, upon the initialization event, reexecuting the configuration load and configuration function (column 4, lines 15-19). Kundu and Sun et al. are analogous art because they are from the same field of endeavor, an in circuit programming system that can run downloaded code and reset the system when necessary. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate a watchdog timer and the functions that come with the timer. The suggestion for doing so would have been the ability to reset the system when an error occurs. Therefore, it would have been obvious to combine Sun Kundu for the benefit of resetting the system to obtain the invention as specified in claims 7 and 8.

As per claims 18-19 and 31-32, see arguments with respect to the rejection of claim 8. Claims 18-19 and 31-32 are also rejected based on the same rationale as the rejection of claim 8.

11. Claims 9 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kundu in view of Sun et al. (USPN: 5,901,330) hereinafter, Sun2.

As per claims 9 and 26, Kundu teaches that the claimed invention as described above, but failed to teach that the configuration load function includes receiving encrypted configuration data via an input port on the integrated circuit, and decrypting the configuration data. Sun2, however, discloses that the configuration load function includes receiving encrypted configuration data via the input port and then decrypting the configuration data (column 13, lines 59-66). Kundu and Sun2 are analogous art because they are from the same field of endeavor, an in circuit programming system that can run downloaded code and reset the system when necessary. At the time of the invention it would have been obvious to a person of ordinary skill in the art to encrypt the incoming data and then decrypt the data. The suggestion for doing so would have been system security. Therefore, it would have been obvious to combine Sun2 and Kundu for the benefit of security to obtain the invention as specified in claims 9. The examiner notes that the in-circuit programming and the configuration load function perform the same function and are therefore not dissimilar enough to differentiate given the known definitions of the two terms.

12. Claims 10 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kundu in view of Lawman (USPN: 6,028,445).

As per claim 10 and 27, Kundu teaches that the claimed invention as described above, but failed to teach that the configuration load function includes receiving compressed configuration data via an input port on the integrated circuit, and uncompressing the configuration data. Lawman, however, discloses a configuration load function that includes receiving compressed configuration data via an input port and then decompressing the data (column 8, lines 12-33). Kundu and Lawman are analogous art because both deal with downloading data in a compressed format to a programmable device. At the time of the invention it would have been obvious to a person of ordinary skill in the art to allow the configuration load function to receive compressed data and to decompress it. The suggestion for doing so would have been to save time and bandwidth. Therefore, it would have been obvious to combine Lawman and Kundu for the benefit of time and bandwidth savings to obtain the invention as specified in claims 10.

13. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kundu in view of Akao et al. (USPN: 5,900,008) hereinafter, Akao.

As per claim 16, Kundu teaches that the claimed invention as described above, but failed to teach that the memory include a protected memory array storing instructions for a first configuration load function, a second memory array storing instructions for a second configuration load function, the first memory array protected

from alteration by a programming function, and the second memory accessible to be written/modified by the programming function.

Akao, on the other hand, teaches the memory include a protected memory array storing instructions for a first configuration load function, a second memory array storing instructions for a second configuration load function, the first memory array protected from alteration by a programming function, and the second memory accessible to be written/modified by the programming function (e.g. see the Abstract). Kundu and Akao are analogous art because they are from a similar problem solving area, processing systems that employ program areas and protection for some of the areas. At the time of the invention it would have been obvious to a person of ordinary skill in the art to add a protected memory area. The suggestion for doing so would have been protect the data from accidental or malicious overwrites/deletes. Therefore, it would have been obvious to combine Akao and Kundu for the benefit of data protection to obtain the invention as specified in claim 16. The examiner notes that Akao does not expressly state protecting the first configuration load function or not protecting the second configuration load function, but that combining Akao and Kundu would give anyone with skill in the art motivation to protect one of the configuration load functions.

Conclusion


14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hetul Patel whose telephone number is 571-272-4184. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on 571-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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